



5TH CATEGORY - HISTORIC RACING
GROUP N
 APPROVED VEHICLE SPECIFICATION

This form details the approved specifications of individual vehicle models in the 5th Category Historic car group. To be issued with an Historic Log Book, cars need to comply with these specifications, the physical appearance shown in the illustrations and the general historic rules as detailed in the current Motorsport Australia Manual.

Make of Car:	Holden	Model:	HQ Monaro GTS 350
Period of Original Manufacture:	Jan 1971 - 1972		
Motorsport Australia Historic Group:	Nc		
Date of Issue of this Document:	23 September 2021		



Refer to Motorsport Australia Manual of Motor Sport, Vehicle Eligibility, Historic Touring Cars, General Requirements & Nc Regulations for permitted modifications.

Update Log

SECTION 1 - CHASSIS

1.1. CHASSIS

Description:	Unitary construction, two door coupe, with sub frames		
Period of Manufacture:	Jan 1971 - June 1972		
Manufacturer:	Holden		
Chassis Number From:	81837Q\$\$????? \$\$ = assembly plant code, ????? = sequence number		
Chassis Number location:	Plate on RHS of fire wall		
Material:	Steel		
Comments	For sub frame reinforcement see Appendix A.		

1.2. FRONT SUSPENSION

Description:	Independent - upper & lower wishbones		
Spring Medium:	Coil		
Damper Type:	Telescopic	Adjustable:	No
Anti-sway bar:	Fitted	Adjustable:	No
Suspension adjustable:	Yes	Method:	Caster, camber and toe
Comments:	Refer to Appendix A		

1.3. REAR SUSPENSION

Description:	Live rear axle		
Spring Medium:	Coil		
Damper Type:	Telescopic	Adjustable:	No
Anti-sway bar:	No	Adjustable:	N/A
Suspension adjustable:	No	Method:	N/A
Comments:	Refer to Appendix A		

1.4. STEERING

Type:	Recirculating ball	Make:	Holden
Power steering	Power steering box		
Comments	None		

1.5. BRAKES

	Front	Rear
Type:	Disc, ventilated	Drum
Dimensions:	279 mm x 25.4mm	254 mm x 50 mm
Material of drum/disc:	Cast iron	Cast iron
No. cylinders/pots per wheel:	Two	One
Actuation:	Hydraulic	Hydraulic
Caliper make:	Holden	
Caliper type:	Split	
Material:	Cast iron	
Master cylinder make:	GM	
Type:	Tandem	
Adjustable bias:	No	
Servo Fitted:	Yes	
Comments:	None	

SECTION 2 - ENGINE

2.1. ENGINE

Make:	Chevrolet		
Model:	Small Block 350		
No. cylinders:	Eight	Configuration:	Veel
Cylinder Block-material:	Cast iron	Two/Four Stroke:	Four
Bore - Original:	101.6 mm	Max allowed:	103.1 mm
Stroke - original:	88.392 mm	Max allowed:	88.392 mm
Capacity - original:	5733 cc	Max allowed:	5904 cc
Identifying marks:	350(A or M) 81837G##### RHS of engine block, on a pad just forward of the right side (passenger) cylinder head.		
Cooling method:	Liquid		
Comments:	Refer to Appendix B for component substitution: <ul style="list-style-type: none"> • GM Performance Small Block: 10066034 • GM Performance Small Block: 88962516 		

2.2. CYLINDER HEAD

Make:	Chevrolet		
No. of valves/cylinder:	Two	Inlet: One	Exhaust: One
No. of ports total:	Eight	Inlet: Four	Exhaust: Four
No. of camshafts:	One	Location: Block	Drive: Chain
Valve actuation:	Pushrod and rocker		
Spark plugs/cylinder:	One		
Identifying marks:	N/A		
Comments:	Refer to Appendix B for component substitution: <ul style="list-style-type: none"> • Dart Iron Eagle 180 SBC 23 Degree cast iron part no 10120010 • RHS "Pro Action" 23 degree Cast Iron SBC head – (180cc Intake Runner/64cc chamber). <ul style="list-style-type: none"> ○ Part No. 12317 straight plug ○ Part No. 12318 angled plug 		

2.3. LUBRICATION

Method:	Wet sump	Oil tank location:	N/A
Dry sump pump type:	No	Location:	N/A
Oil cooler standard:	No	Location:	N/A
Comments:	Oil cooler permitted.		

2.4. IGNITION SYSTEM

Type:	Points, coil & distributor
Make:	Delco
Comments	Breakerless electronic ignition permitted

2.5. FUEL SYSTEM

Carburettor Make:	Rochester	Model:	Quadrajel
Carburettor Number:	One		
Size:	750		
Fuel injection Make:	N/A	Type:	N/A
Supercharged:	No	Type:	N/A
Comments:	Barry Grant reproduction carburettor not approved.		

SECTION 3 - TRANSMISSION

3.1. CLUTCH

Make:	Various
Type:	Diaphragm
Diameter:	280 mm
No. of Plates:	One
Actuation:	Hydraulic
Comments:	None

3.2. TRANSMISSION

Type:	Synchromesh
Make:	GM Muncie M20 or M21 model
Gearbox location:	Behind engine
No. forward speeds:	Four
Gearchange type and location:	H pattern, Remote lever floor
Case material:	Alloy
Identifying marks:	N/A
Comments:	

3.3. FINAL DRIVE

Make:	Chevrolet	Model:	Salisbury, 10 bolt
Type:	Live rear axle		
Ratios:	Various		
Differential type:	Limited slip		
Comments:	Refer Appendix C for component substitution with GM 10 bolt centre. 10 bolt round cover, 8.5" ring gear with 10-ring gear bolts, HQ axle tubes to be reused.		

3.4. TRANSMISSION SHAFTS (EXPOSED)

Number:	One
Location:	Gearbox to final drive
Description:	Open tailshaft with twin uni joints
Comments:	Steel

3.5. WHEELS & TYRES

Wheel type - Original:	Pressed disc	Material - Original:	Steel
Wheel type - Allowed:	Period cast	Material - Allowed:	Alloy
Fixture method:	Studs	No. studs:	Five
Wheel dia. & rim width	FRONT		REAR
Original:	6" x 14"		6" x 14"
Allowed	8" x 15"		8" x 15"
Tyre Section:			
Allowed:	Refer approved tyre list.		
Aspect ratio - minimum:	60% minimum aspect ratio.		
Comments:	None		

SECTION 4 GENERAL

4.1. FUEL SYSTEM

Tank Location:	Boot floor	Capacity:	75 litres
Fuel pump, type:	Mechanical, engine block	Make:	AC
Comments:	None		

4.2. ELECTRICAL SYSTEM

Voltage:	12	Alternator fitted:	Alternator
Battery Location:	Engine compartment		
Comments:	None		

4.3. BODYWORK

Type:	Closed touring	Material:	Steel
No. of seats:	Four	No. doors:	Two
Comments:	None		

4.4. DIMENSIONS

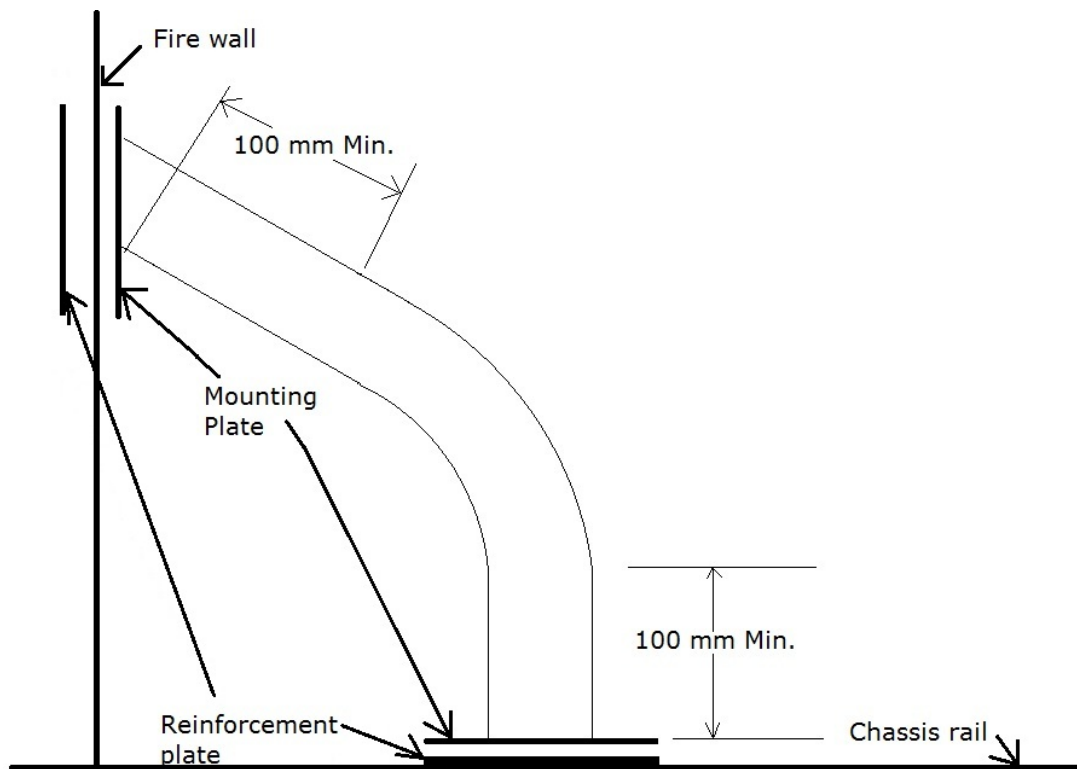
Track - Front:	1529 mm	Rear:	1529 mm
Wheelbase:	2819 mm	Overall length:	4762 mm
Dry weight:	1451 kg		
Comments:	None		

4.5. SAFETY EQUIPMENT

Refer applicable Group Regulations

Appendix A

Sub frame reinforcement



Requirements of sub frame reinforcements

Reinforcement plates:

On chassis rail – minimum of 8 mm thickness. To be the same size of tube mounting plate.

Firewall plate - 3 mm mild steel plate same size of tube mounting plate.

Maximum size of each mounting & reinforcement plates is 75 x 75 mm or 56.25 cm².

Reinforcement tube:

To be round mild steel tube 38mm dia. With 2.5 mm wall thickness.

Minimum length of straight tube from the end of the bent to the mounting plate is to be 100 mm.

The bend in the reinforcement tube is to be a included angle between 90° and 120°.

Location:

Lower chassis rail mounting point is on the chassis rail. Location is allowed from the firewall to 200 mm forward of the front wheel centre line.

The upper mount on the firewall in not to be aligned with any part of the roll cage.

The locating area on the firewall is defined by a rectangle within the following parameters.

The vertical area is from the top of the chassis rail to the top of the firewall.

The horizontal area is from the outer edge of the chassis rail (where it contacts the firewall) to 300 mm towards the centre line of the vehicle.

Mounting:

Chassis reinforcement plate to be welded to chassis rail, drill & tapped to allow mounting plate attachment.

Firewall reinforcement plate is to be bolted through the firewall & tube mounting plate.

Each mounting point to incorporate at least two fasteners having the minimum diameter of M8 and minimum quality 8.8 (ISO standard), self-locking or fitted with lock washers.

Appendix B

Block

Spare part 10066034 GM performance parts replacement small block 305, 327 & 350, four bolt design with split rear seal.

Logbook endorsed and the engine sealed required.

Spare part 88962516 GM performance parts replacement small block 305, 327 & 350, four bolt design with one-piece rear seal, a kit to retain split rear seals is available and will be permitted.

Logbook endorsed and the engine sealed required.

88962516 Engine Block Casting Numbers

N/A

10066034 Engine Block Casting Numbers

3782870	3789817	3790721	3791362	3794460	3852174	3858174
3858180	3858190	3868657	3876132	3892657	3903352	3914660
3914678	3932368	3955618	3959512	3970010	3970014	3970016
Or others by specific approval						

Cylinder Heads

GM Cylinder Head Casting Numbers

3782461	3890462	3917291	3917292	3917293	3927185	3927186
3927187	3927188	3932441	3947041	3973414	3973487	3986316
3986339	3991492	3998916	3998993			
Or others by specific approval						

Approved substitute heads are:

- Dart Iron Eagle 180 SBC 23 Degree cast iron part no 10120010 *
- RHS "Pro Action" 23 degree Cast Iron SBC head – (180cc Intake Runner/64cc chamber).
Part No. 12317 straight plug
Part No. 12318 angled plug

The heads are to be in the manufactured state, save for refacing the cylinder gasket face and matching the inlet ports by not more than 12mm from the port face.

- * Dart Iron Eagle require the use of a MSD Soft Touch rev limiter Part No 8728 with a 7500 RPM limit. The limiter will be subject to testing at race meetings. The limiter will be located in an easily accessible position within the engine bay.

Sealing procedure for engines using the substitute cylinder head

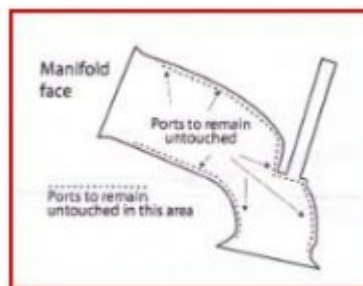
1. Engine to be assemble to short motor without sump.
2. Heads to be assembled ready to be fitted to engine.
3. 2 sump bolts/studs to be drilled. 2 top timing case bolts/studs to be drilled.
4. The sealer will pick two valves from one cylinder of either head to be removed to check that under the valve head and the ports are unmodified and that the valve heads are 1.94" in diameter for the inlet, and 1.6" for the exhaust.
5. Check the inlet and exhaust ports are unmodified except for the allowance allowed, from the manifold faces, into the port for manifold alignment.
6. Combustion chambers are to be as per above.
7. Measure bore and stroke.

8. Note whether 2 bolt or 4 bolt block.
9. Fit sump and fit seal. Seal timing case.
10. Fit heads and drill holes in appropriate positions in the corners of the block and heads to enable wire and seals to be fitted.
11. Seal heads to block. Note seal numbers. Competitor gets a signed sealers document.

Note: If the heads are removed, they must be re-sealed following the above points 4, 5, 10 and 11.

Allowances

1. Surfacing of the head face is allowed to achieve required combustion chamber volume or restore the cylinder head from engine failure damage and/or overheating.
2. K Line .030" bronze valve guide inserts are allowed if required and to recondition to standard size from excessive wear.
3. Port match inlet and exhaust ports to manifold to a maximum of the allowed depth from the manifold face. Inlet and exhaust ports must be left completely untouched from under the valve seats to within allowed depth from the manifold face. Machining is allowed of the valve spring pad and valve guide outside diameter and length as well as pushrod holes. This will enable spring locators, valve springs, stem seals, valve spring installation height and pushrod clearance to be correctly set up and fitted.
4. Valve seat cutting/grinding is allowed, but the original valve sizes of inlet and exhaust must be retained. No machining is permitted under the valve seat.
5. No machining is permitted in the combustion chamber. Combustion chambers must be left completely untouched except for original machining by the manufacturer. i.e. No machining, no hard or soft wire brushing, no coarse or fine grinding either by hand, machine or high-speed grinder etc, no shot peening, no sand blasting, no glass bead blasting, no water blasting, no hand scraping, no filing, no emery wheels or stones, no acid etching, no chiselling, no hammering or pneumatic peening, no flexi honing, no spark eroding, no removal of any metal by milling machine.



Appendix C

Rear axle centre approved replacement

GM Holden HQ rear axle centre is permitted to be replaced with GM USA 10 bolt coil spring rear axle assembly centre and associated crown wheel & pinion. GM USA 10 bolt rear axle assemble centre identification. Bolt pattern is a circle; Casting lugs at 5 & 7 O'clock positions. Casting lugs at 5 & 7 O'clock positions.

